

CLAIMS

1. **(Currently Amended)** A system to order a plurality of nodes associated with entities in a document, said system comprising:

- a. a node generator parsing said entities in said document and creating a plurality of nodes that represent said entities and relationships that exists among said entities;
- b. a node grouper grouping said created plurality of nodes into a plurality of regions based upon anticipated access pattern and usage, each of said regions defining an area within a n-dimensional space formed by steps and levels, wherein n is greater than one and each region defined by a minimum step, a minimum level, a maximum step, a maximum level, and a step range, said step range assigned a value of 0 if minimum step is less than or equal to the maximum step and is assigned a value of the minimum step if the minimum step is greater than the maximum step; and
- c. a formatter for formatting said plurality of regions for storage.

2. **(Original)** A system as per claim 1, wherein said regions are node descendant regions.

3. **(Original)** A system as per claim 1, wherein said formatted regions are stored in one or more pages.

4. **(Canceled).**

5. **(Original)** A system as per claim 1, wherein said node grouper additionally monitors insertion or deletion of nodes in each of said regions, whereby modifications to nodes within a

particular region affects only said nodes in said particular region, said modifications causing nesting levels to be created based of a parent level region.

6. **(Original)** A system as per claim 1, wherein said document is a mark-up language based document.

7. **(Original)** A system as per claim 6, wherein said mark-up language based document is an XML document.

8. **(Original)** A system as per claim 1, wherein said system associates post order traversal numbers with said plurality of nodes, said post order traversal numbers identifying containment relationships among nodes.

9. **(Original)** A system as per claim 1, wherein said system is implemented across networks.

10. **(Original)** A system as per claim 9, wherein said network is any of the following: local area network, wide area network, or the Internet.

11. **(Currently Amended)** A method for ordering a plurality of nodes associated with entities in a document, said method comprising:

- a. parsing said entities in said document and creating a plurality of nodes that represent said entities and relationships that exists among said entities;
- b. grouping said created plurality of nodes into a plurality of regions, each of said regions based upon anticipated access pattern and usage, each of said regions defining an area within a n-dimensional space formed by steps and levels, wherein n is greater than one and each region defined by a minimum step, a

minimum level, a maximum step, a maximum level, and a step range, said step range assigned a value of 0 if minimum step is less than or equal to the maximum step and is assigned a value of the minimum step if the minimum step is greater than the maximum step; and

c. formatting said plurality of regions for storage.

12. (Original) A method as per claim 11, wherein said regions are node descendant regions.

13. (Original) A method as per claim 11, wherein said formatted regions are stored in one or more pages.

14. (Canceled).

15. (Original) A method as per claim 11, wherein said method comprises the additional step of monitoring the insertion or deletion of nodes in each of said regions, whereby modifications to nodes within a particular region affects only said nodes in said particular region, said modifications causing nesting levels to be created based of a parent level region.

16. (Original) A method as per claim 11, wherein said document is a mark-up language based document.

17. (Original) A method as per claim 16, wherein said mark-up language based document is an XML document.

18. (Original) A method as per claim 11, wherein said system associates post order traversal numbers with said plurality of nodes, said post order traversal numbers identifying containment relationships among nodes.

19. (Original) A method as per claim 11, wherein said method is implemented across networks.

20. (Original) A method as per claim 19, wherein said network is any of the following: local area network, wide area network, or the Internet.

Claims 21-33 (**Previously Cancelled**).